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BRIAN M. DINGMAN MIRICK, O'CONNELL, DEMALLIE & LOUGEE, LLP 100 FRONT STREET WORCESTER, MA 01608			FINEMAN, LEE A	
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GROUP 2800

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 06012004

Application Number: 09/682,659
Filing Date: October 03, 2001
Appellant(s): HEY, JOHN

Brian M. Dingman
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5 April 2004.

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(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

For Group I (claims 14-19 and 21-26), the appellant's statement in the brief that the claims do not stand or fall together is not agreed with because the appellant does not provide any reasons in support thereof. Appellant's arguments are the same for all claims and groups, thus appellant has not provided arguments for separate and specific patentable features of each group. Therefore all the claims in this group are taken to stand or fall together. NOTE: Appellant

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mistakenly included cancelled claim 20 in the listing of claims of this group. Group I comprises independent claim 14 and dependent claims 15-19 and 21-26.

For Group II (claim 41), the appellant's statement in the brief that the claim does not stand or fall together with any other group is not agreed with because the appellant does not provide any reasons in support thereof. Appellant's arguments are the same for all claims and groups, thus appellant has not provided arguments for separate and specific patentable features of each group. Therefore the claim in this group is taken to stand or fall together with Group I and Group III.

For Group III (claim 42), the appellant's statement in the brief that the claim does not stand or fall together with any other group is not agreed with because the appellant does not provide any reasons in support thereof. Appellant's arguments are the same for all claims and groups, thus appellant has not provided arguments for separate and specific patentable features of each group. Therefore the claim in this group is taken to stand or fall together with Group I and Group II.

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

4,740,836	Craig	4-1988
6,456,339 B1	Surati et al.	9-2002

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(10) *Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

Claims 14-19, 21-26, and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craig, U.S. Patent No. 4,740,836, in view of Surati et al., U.S. Patent No. 6,456,339 B1.

Regarding 14-15, 18-19, 21, 26 and 41-42, Craig discloses a system for stereoscopic viewing of an image (fig. 4) comprising a means (11, fig. 1) for displaying upon a generally flat surface a conventional stereoscopic pair of images (13 and 15, fig. 1), proximate but separately from one another and in which the images are arranged one above the other; an optical device (41), which is a prism, adapted to be placed in front of and proximate to a viewer's eyes (fig. 4), which device is worn by the viewer (column 6, lines 11-14) comprising a means for re-angling the optical axis for at least one eye, so that each eye generally targets the center of a respective one of the pair of images (fig. 5 and column 7, line 35-column 8, line 14), employed to effect a stereoscopic meld of two 2-dimensional images (column 5, lines 49-55); and wherein the images are displayed upon a surface large enough to subtend an immersive portion of the viewer's visual field (column 8, lines 6-14). Craig discloses the claimed invention except in which at least one image is deliberately distorted prior to display to counteract distortion caused by the viewer's perspective relative to the image or image-mismatch cause by the viewing device. Surati et al. teaches a system for viewing an image (fig. 13a) with a means (407) of distorting at least one of the images, in which at least one image is deliberately distorted prior to display to counteract distortion (column 8, lines 54-57) caused by the viewer's perspective relative to the image or image-mismatch caused by the viewing device (column 1, lines 51-60, in so far as the same

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problems projecting the image on a screen are encountered by the viewer viewing the screen). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a means to deliberately distort at least one image prior to display as suggested by Surati et al. to the system of Craig to improve the performance of the display (column 9, lines 23-25).

Regarding claims 16-17 and 25, Craig further discloses a system in which the optical axis for exactly one eye is reangled (column 5, lines 21-36) and wherein the optical device comprises a pair of mirrors for each reangled eye (column 7, lines 31-34 and figs. 5b₁ and 5b₂) and at least one mirror is adjustable to accommodate variation in image positioning or viewing distance (column 8, lines 1-5).

Regarding claims 22-24, Craig further discloses a system wherein the images comprise the display for a video game, a televised display of still- or motion-picture images and a computer-graphics display of still or motion picture images (column 4, lines 37-39 and column 5, lines 1-2).

(11) *Response to Argument*

Appellant argues that Surati et al. does not propose any means for improving a stereoscopic match between two images because Surati et al. only addresses the problem of misalignment when creating a high-quality seamless image and therefore is not appropriate for stereoscopic systems. The examiner respectfully disagrees. Surati et al. teaches in column 1, lines 51-60, that it is well known that when images are viewed or shown at an angle that is not perpendicular to the screen/display angle, various types of distortion (e.g., keystoneing and trapezoidal) occur. As Craig is also a system in which images are viewed or shown at an angle that is not perpendicular to the screen/display angle, (see fig. 5), the problem of distortion stated by Surati et al. is relevant to the system of Craig.

Surati further teaches a means (e.g., 407, fig. 13a) that corrects for these distortions by deliberately distorting an image prior to display (column 8, lines 54-57). While this distortion correction means is not specifically stated to be used on an image in stereoscopic systems like Craig, it is still logical to apply it to any image that is viewed or shown at an angle that is not perpendicular to the screen/display angle, which includes an image of Craig, since the same problem of image distortion will occur. Therefore, since Craig is a display system where an image at an off angle would be distorted, one of ordinary skill in the art would have been motivated to deliberately distort that image of Craig, as taught by Surati et al., to provide improved performance of the display by providing a better final image to the viewer.

Additionally, appellant argues impermissible hindsight has occurred. However, since the combination of Craig and Surati takes into account only knowledge of a problem which was within the level of ordinary skill at the time the claimed invention was made (i.e. the problem of

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an image viewed at an off angle taught in Surati and demonstrated in Craig's fig. 5) such a reconstruction is proper.

Finally, appellant argues that no one has ever deliberately distorted one or both images of a stereoscopic pair in order to improve the stereoscopic match between images, and this is evidence of nonobviousness. It should be noted, however, that the motivation for the combination of the rejection is not necessarily based on the match of the stereoscopic images, but on improving images viewed at an off angle. Yet, by improving the view of Craig's image by the predistortion techniques taught by Surati, the stereoscopic match of Craig's images will also be improved to the viewer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,





LAF
June 9, 2004

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